

REMARKS

The present Amendment amends claims 1-4, 6-12 and 14-20 and cancels claims 5 and 13. Therefore, the present application has pending claims 1-4, 6-12 and 14-20.

In paragraph 1 of the Office Action the Examiner objected to U.S. Patent Application Publication Nos. 2003/110237 A1 and 2004/010654 A1 submitted with the April 19, 2006 Information Disclosure Statement. A PTO-1449 correctly identifying the references to be considered is attached. An indication that such references have been considered is respectfully requested.

In paragraph 2 of the Office Action the Examiner objected to the title of the invention as not being descriptive. The title was changed to "STORAGE SYSTEM WITH HETEROGENOUS STORAGE, CREATING AND COPYING THE FILE SYSTEMS, WITH WRITE ACCESS ATTRIBUTE", which Applicants submit is descriptive of the invention. Therefore, this objection is overcome and should be withdrawn.

Claims 1, 3, 6, 12, 17 and 18 stand rejected under 35 USC §102(b) as being anticipated by Fitzgerald (U.S. Patent No. 5,787,485); claims 2, 4, 5 and 13 stand rejected under 35 USC §103(a) as being unpatentable over Fitzgerald in view of van Cruyningen (U.S. Patent No. 6,338,110); claims 8, 9 and 20 stand rejected under 35 USC §103(a) as being unpatentable over Fitzgerald in view of Yamamoto (U.S. Patent Application Publication No. 2003/0236884); claims 7, 14 and 19 stand rejected under 35 USC §103(a) as being unpatentable over Fitzgerald and further in view of Strange (U.S. Patent Application Publication No. 2003/0084242); and claims 10, 11, 15 and 16

stand rejected under 35 USC §103(a) as being unpatentable over Fitzgerald, Yamamoto and Strange. As indicated above, claims 5 and 13 were canceled. Therefore, the 35 USC §103(a) rejection of claims 5 and 13 is rendered moot.

With respect to the remaining rejections of claims 1-4, 6-12 and 14-20, these rejections are traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-4, 6-12 and 14-20 are not taught or suggested by Fitzgerald, van Cruyningen, Yamamoto and Strange whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

Amendments were made to claims 1-4, 6-12 and 14-20 to more clearly describe features of the present invention as recited in the claims. Particularly, amendments were made to the claims to more clearly recite that the present invention is directed to a first storage system coupled to a second storage system, a system including the first and second storage systems and a computer program implemented on first and second storage systems.

According to the present invention the first storage system is connected to a computer and the second storage system, and includes a first storage device configured to a first file system, a first controller for controlling the first storage system, and a second controller for controlling input/output operations to/from the second storage system. The second storage system includes a third controller and a second storage device, configured to a second file system, connected to the third controller.

Further according to the present invention the first controller mounts a root directory of the second file system at a mount point in the first file system such that the first and second file systems are provided to the computer as a single directory tree.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features of the present invention now more clearly recited in the claims are not taught or suggested by Fitzgerald, van Cruyningen, Yamamoto and Strange whether taken individually or in combination with each other or any of the other references of record.

Fitzgerald teaches performing a mirror set copy from a first storage device to a second storage device in which write requests are each associated with a reference label. As taught in Fitzgerald the write requests and a mirror read request are received at the first storage device, and the write requests also are received at the second storage device. The write requests are processed at the first storage device, and data is read from the first storage device in response to the mirror read request. The first storage device then sends the data to the second storage device along with information designating write requests that the second storage device is permitted to process. Thereafter, as taught by Fitzgerald the second storage device writes the data and processes any write requests designated by the information provided by the first storage device as being permissible for the second storage device to process.

Thus, as is clear from the above Fitzgerald is only concerned with the mirroring of data between first and second storage devices not the accessing of files in files systems as in the present invention. More specifically Fitzgerald is not concerned with the combining of two different file systems in two different storage devices so that the two different file systems appear as a single directory tree to a host computer as in the present invention as recited in the claims.

Thus Fitzgerald fails to teach or suggest that a first storage system is connected to a computer and the second storage system, and includes a first storage device configured to a first file system, a first controller for controlling the first storage system, and a second controller for controlling input/output operations to/from the second storage system, wherein the second storage system includes a third controller and a second storage device, configured to a second file system, connected to the third controller as recited in the claims.

Further, Fitzgerald fails to teach or suggest that the first controller mounts a root directory of the second file system at a mount point in the first file system such that the first and second file systems are provided to the computer as a single directory tree as recited in the claims.

Therefore, Fitzgerald fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §102(b) rejection of claims 1, 3, 6, 12, 17 and 18 as being anticipated by Fitzgerald is respectfully requested.

The above described deficiencies of Fitzgerald are not supplied by any of the other references of record. Particularly, the above described features

recited in the claims shown above not to be taught or suggested by Nakamura are not supplied by van Cruyningen, Yamamoto and Strange.

van Cruyningen is relied upon by the Examiner for an alleged teaching of a controller using the RAID system and having multiple storage devices. However, van Cruyningen is only concerned with storage arrays not file systems as in the present invention as recited in the claims. Particularly van Cruyningen is not concerned with the combining of two different file systems in two different storage devices so that the two different file systems appear as a single directory tree to a host computer as in the present invention as recited in the claims.

Thus, van Cruyningen suffers from the same deficiencies relative to the features of the present invention as now more clearly recited in the claims as Fitzgerald. Therefore, the combination of Fitzgerald and van Cruyningen still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 2, 4, 5 and 13 as being unpatentable over Fitzgerald in view of van Cruyningen is respectfully requested.

The above described deficiencies of Fitzgerald and van Cruyningen are also evident in Yamamoto and Strange. Both of said references are not concerned with the combining of two different file systems in two different storage devices so that the two different file systems appear as a single directory tree to a host computer as in the present invention as recited in the claims. There is some teaching in Strange about file systems. However, as noted by the Examiner in the Office Action the teaching in Strange concerning a file system is simply related to creating a new file system and deleting the

old file system. This teaching of Strange is not in any way related to the features of the present invention as recited in the claims.

Thus, Yamamoto and Strange, the same as Fitzgerald and van Cruyningen, fail to teach or suggest the features of the present invention as now more clearly recited in the claims. Therefore, the combination of Fitzgerald with one or more of van Cruyningen, Yamamoto and Strange still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 8, 9 and 20 as being unpatentable over Fitzgerald in view of Yamamoto, the 35 USC §103(a) rejection of claims 7, 14 and 19 as being unpatentable over Fitzgerald and further in view of Strange, and the 35 USC §103(a) rejection of claims 10, 11, 15 and 16 as being unpatentable over Fitzgerald, Yamamoto and Strange is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-20.

In view of the foregoing amendments and remarks, applicants submit that claims 1-4, 6-12 and 14-20 are in condition for allowance. Accordingly, early allowance of claims 1-4, 6-12 and 14-20 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (500.43772X00).

Respectfully submitted,

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